

REMARKS

The rejection of Claims 7 – 10 on grounds of provisional obvious-type double patenting based on Claim 8 of pending application Serial No 09/636,625, (now U.S. Patent No. 6,501,617) is traversed, and reconsideration is respectfully requested.

Said Claim 8, presumably Claim 1 of said patent, contains no reference to or suggestion involving a preliminary plastic bonding followed by a plastic bonding which inherently results in a different structural arrangement. There is nothing in the prior art that would have made a body so produced obvious.

The rejections of Claims 7 -10 as being anticipated by JP'268 or Tatsumi et al. under 35 U.S.C. §102(b) of Claims 7 and 10 as being anticipated by Saito under 35 U.S.C. §102(e) and of Claims 7 – 10 as being anticipated by Rehm et al. under 35 U.S.C. §102(e) are traversed. Reconsideration of each of these four rejections is respectfully requested.

Simple stated, the cited documents do not show two-step plastic bonding. To the contrary, they involve single step bonding which inevitably results in a structure in which a small clearance is unfilled between the bonded member. For example, the JP'268 document which is assigned to the company, Hitachi, Ltd., which is also the assignee of the present application, the shaft having grooves on the periphery is pressure-fitted in the hub bonding hole and the disc

is caused to undergo plastic flow by plastic deformation to fill the recesses with the hub material.

The present invention involves the use of a preliminary plastic bonding where the metal member, e.g., a hub is plastically deformed to fill the clearance with the deformed member and a second plastic bonding for bonding the metal members by pressing the bonding punch 70 (Fig. 9) having a projection width W (Fig. 10) smaller than the projection width of the preliminary bonding punch. The plastic flow or second plastic bonding is carried out a higher pressure or load than that of the preliminary plastic bonding. Thereby, the resulting bonded body has a higher strength than that of the conventional by one-step bonded body. The preliminary plastic bonding used in the present invention does not cause plastic flow of the metal members, but services only to deform the member to fill the clearance between the member. It is the second plastic bonding that causes plastic flow of metal member in the clearance, thereby achieving the advantages more fully described at page 18, lines 7 -14 of the Specification

Accordingly, early and favorable action is earnestly solicited.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and

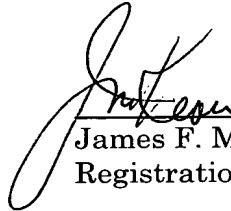
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Respectfully submitted,

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